

# Working from a common plan

BY JANET KREILING / PHOTO BY STEVEN KENNEDY

SINCE STANDARDIZING ON PRIMAVERA, AMERENUE HAS CREATED AN ENTERPRISE PROJECT MANAGEMENT PROCESS FOR MANAGING THE COMPANY'S IN-HOUSE PROJECTS — AND NOW ASKS ITS CONTRACTORS TO DO THE SAME.

Records are usually set by the young. That's as true in power generation as it is in running marathons. But AmerenUE's 865-megawatt coal-fired Meramec generating plant celebrated its fiftieth year in service in 2003 by producing its personal best — some 5.5 million megawatt hours. That's a source of pride to Plant Manager Ozzie Lomax, but not really a surprise. It reflects the focus on operations and reliability that parent company Ameren Corporation considers crucial.

That focus has won Ameren, a St. Louis-

based electric and gas utility with operations in three Midwestern states, a reputation among customers and in the investment community for low-cost, high-quality service. Its costs are among "the lowest in the country," Lomax says, and its chairman and CEO, Gary Rainwater, points out that total return to shareholders based on share prices in the three years ending in December, 2003, has been 5.94 percent, compared to an 11.6 percent loss for S&P 500 investors and a drop of 38.5 percent for S&P electric utilities. Those results, just



Ozzie Lomax manages AmerenUE's 865-megawatt coal-fired Meramec generating plant.

as the marathoner's, depend in large part on maintaining the physical health of the facilities – that is, making project and risk management core competencies.

Ameren is a stickler for rigorous maintenance. Each of the four generating units at Meramec is taken out of service for maintenance every three to four years. That's where the project and risk management come in. The planned outages may last anywhere from five to 12 weeks, depending on the amount of work to be done, and can involve up to 3,000 different tasks and 900 workers.

When the project schedule for an outage is finalized, Meramec informs Ameren's Energy Supply Operations, which is responsible for coordinating Ameren's power grid. If the schedule says five weeks, and the outage runs to six or seven, Lomax explains, "problems may develop, as Energy Supply Operations depends on us to produce the power that Ameren customers need. Not being there for our customers exposes the company to financial risk," Lomax says. Obviously, he'd much rather meet the schedule.

### **3,000 TASKS FOR ONE MAINTENANCE OUTAGE**

Asked to rate the complexity of scheduling an outage, Lomax comments, "On a scale of one to ten? Fifty. Planning a 3,000-task outage can be very complex." Disassembling, inspecting, refurbishing, and reassembling equipment may take five to seven weeks,

All of the combustion unit's boiler components – valves, motors, pumps – must be inspected and repaired if necessary, each job taking from a few hours to several days. There are miles of steam tubing and wiring, thousands of welds, and miles of conveyor belts.

This is where experience and coordination come in. The project management staff begins creating a schedule by pulling up records from previous maintenance outages as a basis for their listing and scheduling of tasks. Meramec has been using the Primavera Maintenance & Turnaround solution for two years now, so the staff has good records. Using those as a foundation, the team and representatives from the major contractors on the project began brainstorming, going over the individual steps

personnel needs.

Once all the information has been entered into Primavera, the software takes into account the estimated times for each task as well as the sequencing of tasks, and kicks out a schedule that is shared with Ameren's engineering staff, senior managers, plant personnel and the major contractors – who also use the Primavera solution. They in turn, create their own individual schedules and feed them back over the Web to Meramec's master schedule. Primavera then creates the working schedule. Given a start date, it forecasts the end date. This is the estimate that Lomax gives to Energy Supply Operations.

### **SHARING SCHEDULING WITH CONTRACTORS**

"We've standardized on Primavera

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and the links among them – what must precede any given step and what, in turn, depends on that step. Procurement of materials is factored into the schedule, as are

across our entire division and developed templates for risk, communications, and quality management that each project manager uses," Lomax says. "Our project manage-

ment competency is maturing quickly. We've adopted the Project Management Body of Knowledge, and we also ask our project managers to become certified by the

has yet to do. Contractors can check on whether tasks that must precede their own are on track; if not, they can adjust their own work. They can also adjust their schedules if another

scheduled time is gone, but only 40 percent of what should have been completed is actually finished. "We can tell immediately if we're falling behind schedule," he says. Or vice

**"We've standardized on Primavera across our entire division and developed templates for risk, communications, and quality management.**

**– Ozzie Lomax, plant manager, AmerenUE**



Project Management Institute."

In addition, using Primavera has become a requirement for the contractors that Ameren uses frequently and has designated "Alliance Contractors." After participating in the initial scheduling process, these contractors update their progress every week over a dedicated Website, just before Meramec's weekly status meetings. On the construction site, they're tied into the Ameren server through a local area network and PCs in their trailers, and generally update the schedule daily. Contractors train on Primavera along with Ameren PMs, something Lomax says he's "really excited about."

Requiring the major contractors to use Primavera and communicate directly with Meramec's schedule means there can be a true master schedule, and a record of the work that everybody has completed and

contractor needs more time.

Primavera is the major means of communication about the job. "If a senior company officer wants to check on progress," Lomax says, "he or she can request a summary. If a division manager wants the status of five key components, it's available. The daily supervisor can pull up what needs to be planned for tomorrow. The software is 'scalable' – it provides any level of information people want."

Moreover, the master schedule just makes communication so much simpler. "One big advantage is that I can check something quickly without having to make fifteen phone calls or chase people down. The Primavera reports don't replace walking the construction site, but they make checking progress a lot easier," he adds.

For instance, the program can tell Lomax if, overall, 50 percent of the

versa, of course. Primavera also conveys the latest information entered by contractors, so Lomax can tell if a given contractor has completed 10, 20 or 50 percent of a specific job. Primavera can also weight various tasks in a summation that reports what percentage of a contractor's total assignment has been completed.

Having contractors using the same project management software enables Ameren to make better use of its own resources as well, Lomax adds. "We may have 300 Ameren people on a job and 600 from our contractors. The contractors, of course, have to know when to bring their people in, which they can check in Primavera. But we also have to know when to schedule our people – Ameren has a group of specialists that are shared among its fossil fuel plants.

Accurate scheduling ensures that we have people in place at the right time, and can release them to the next project on time.”

**CONTINGENCY PLANNING**

It also automatically forecasts “what-ifs” – what if the schedule was planned around having 100 welders, but only 75 are available? Enter the new information and you know what that deficit does to the schedule; you can then plug in various contingency plans to see which will actually get the schedule back on track. “Primavera helps us deal with the additional tasks, scope changes, that inevitably develop once you get into a project. It can

tell us how many more resources we need, or if they aren’t available, how much more time the project will take.”

Built into the schedule as a matter of course is planning for risks. Here, the historical schedules retained in Primavera can provide definitive data on how many days really need to be scheduled for weather and other unforeseen problems. That helps Meramec and Ameren maintain their skill in managing risks. Lomax points out that the company has also instituted a two-day risk management class that all PMs attend.

“Committed people, good planning, with good project management

software and good risk management” not only enable Meramec to meet schedules, but also to actually shorten them. Lomax cites the example of having shaved nine days off an outage that was originally planned to take 84. “Our competency in project management really gives Ameren a strategic advantage.

“We want to be in the top quartile of electric utilities. We want to be the best of the best. The right people, the right projects, and the right processes will get us there.” •

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## The Contractor’s View: Upstream and Downstream

Paris-based Alstom, a major global manufacturing and construction firm, has been an Alliance partner with Ameren since 2000, handling the replacement of coal pulverizers, major pressure parts and burners. It began using Primavera at Ameren’s request during the summer of 2002. One crucial benefit, says Ray Walls, area construction manager for Alstom subsidiary APCoPower, is that “we can see upstream and downstream. If part of our work depends on the arrival on the first of the month of a certain piece of equipment ordered by AmerenUE, and the arrival date has slipped to the 15th, we know immediately, not just a few days before, as can happen without an integrated schedule.”

Alternately, he can look at the integrated schedule and see where adjusting his timing can help out someone else. “There was one instance where it looked to me as if the schedule didn’t allow enough time for I/O checks on wiring functionality,” one of the last tasks to be done. “We were able to target certain areas in our installation of a new burner so that we could make up enough time

to allow for the electrical checks.”

Without the integration between customer and contractor, he adds, “schedules tend to be too general, not very detailed. My schedule only deals with my needs, and I don’t see problems coming.”

Adds Roger Aubrey, an Alstom project manager with oversight for Ameren contracts, “having our schedule

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integrated with Ameren’s enables us to help our customer reach its goals and even improve its outage times. It’s a strategic advantage for both of us.”

Alstom is independently working to integrate the Primavera solution with JDEdwards financial software so that costs, say for manpower, can be automatically fed back into the project schedule. And, says Aubrey, he’d like to work with other customers in the integrated way Alstom is now working with Ameren. — JK